We celebrate the men and women who are reinventing and reenergizing STEM, business, and government.

One on One

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FROM PRIVATE E-1 TO ARMY CHIEF INFORMATION OFFICE G-6



Army CIO Lieutenant General Robert S. Ferrell poses with two West Point cadets at the 2014 BEYA STEM Career Fair in Washington, D.C.

Taking the Army to the Future

t. Gen. Robert S. Ferrell is stepping into very large shoes. Not only is his career the fulfillment of a 70-year family tradition of military service—the first general officer, now with three stars on his shoulders—he succeeds to a post as chief information officer in which he gets to oversee the transformation of a storied branch of the U.S. Army: the Signal Corps.

To an outsider unfamiliar with the opportunities available in today's education-focused, technology-centered military, Buck Private Ferrell's path to lieutenant general was not the typical journey, but filled with determination for achievement and lifelong learning. He joined the Army in 1977—"seven, seven, seventy-seven," as he puts it—and rose to the rank of sergeant as he completed two years of college study at Fayetteville State University.

Even as a young sergeant, the future lieutenant general

knew then the importance of getting an education. When his enlistment ended, the young Bob Ferrell went on to finish his B.S. studies at Hampton University, with enough credits to enroll as a junior. While at Hampton, Ferrell continued his military career as a Reserve Officer Training Corps cadet and member of the National Guard where he participated in a program that allowed him to keep his sergeant's pay while he matriculated at the university. Upon graduation in 1983, Ferrell returned to active service as a second lieutenant, beginning his long climb into the Army's top echelons.

A Golden Moment

That by itself constitutes a story worth emulation by many a young career-climber. When Lt. Gen. Ferrell stood at attention during promotion ceremonies to accept his third star, his father and uncle, 80-plus-year-old warriors who, between them, had seen service in World War II, Korea, and Vietnam, mounted the stairs to join him on the platform.

Lt. Gen. Ferrell an Anniston, Alabama native who grew up

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in the New Jersey Shore area, achieved his lifelong ambition to follow his forbearers into military service, described the scene in an interview. "It was the proudest moment of my life."

But that interview also made it clear that Ferrell doesn't spend a lot of time looking backward. The career path he's blazed kept him far too busy for that.

Ferrell, who holds Master of Science degrees in administration from Central Michigan University and in strategy from the Army War College, has served at several Army posts, including the United States, Korea, Europe, Bosnia and Iraq.—At each assignment, Lt. Gen. Ferrell met challenges head on, and has served in a variety of leadership roles from platoon leader to Army major subordinate commander. His unique assignments have given him the opportunity to travel across the globe to Africa, Afghanistan, Russia, China, Vietnam, Australia, South America, and other places many people only dream of traveling to.

Giant Steps in His Career

Among other accomplishments, the young officer Ferrell earned his master parachutist wings and served as operations officer and communications-electronics officer, second Battalion, seventh Special Forces Group (Airborne); and captain assignments officer with the Signal Branch Army Personnel Command before stepping up as aide-de-camp to the Secretary of the Army. Ferrell went on to become assistant division signal officer at the 82d Airborne Division; executive officer of the 82nd Signal Battalion; operations officer of the seventh Signal Brigade, fifth Signal Command; aide-de-camp to the commanding general, V Corps, U.S. Army Europe and Seventh Army in Germany before he returned to the Pentagon to serve as military assistant to the executive secretary, Office of the Secretary of Defense.

During the Iraq war, Lt. Gen. Ferrell served as military assistant to the director of the Coalition Provisional Authority's program management office for Operation Iraqi Freedom. Ferrell bounced back to the Pentagon to be chief of the programs division of the Office of the Chief Legislative Liaison. After serving as an Army senior fellow with the Council on Foreign Relations in New York, he became director of Army modernization, and strategic communication for the Army Capabilities Integration Center-Forward, Army Training and Doctrine Command. Following that assignment, Ferrell served as director for C4 Systems (Command, Control, Communications and Computers) for the U.S. Africa Command.

Medals and Ribbons and Then Some

Decorations followed all that heavy-duty service: The Distinguished Service Medal, two awards of the Defense Superior Service Medal, three citations for the Legion of Merit, a Bronze Star, six Meritorious Service Medal citations, six Army Commendation Medal citations, and two Army Achievement Medal citations.

His vast experiences prepared him for the incredible mission that lied ahead: Overseeing \$10 billion worth of investments in information technology at a time when the United States--especially its military arms--is under intense assault by foreign agencies attempting to penetrate the Pentagon's



Lt. Gen. Robert Ferrell, chief information officer, United States Army, at the BEYA STEM Conference.

deepest secrets and prise out the capabilities of the most modern weapons systems, strategic plans, and tactical operations the world has ever seen.

Priorities for the New CIO

Army public affairs officer Andricka Thomas put it this way: "With cyber defense and the network being a top priority for Army and DoD, the work that gets done out of the general's area of responsibility is truly vital to the Army's future. Building the Army's network capacity in IT and cyber defense; educating and training a new generation of cyber and IT professionals within our military and civilian ranks; and identifying and reducing network vulnerabilities to strengthen the security of our network . . . in all those mission areas, I expect the young people of today will support as they take our Army into the future.

"There is much work to be done. The Army is consolidating data centers, increasing bandwidths at our posts, camps and stations and looking at moving services to the cloud using our Defense Information Systems Agency's services. It's a joint effort."

Interviewed by phone from a post in Hawaii during a whirlwind tour of units in the Pacific theater, Ferrell listed his priorities:

- Maintain support to our deployed forces and set conditions to transition to a regionally aligned Army;
- Providing Signal capabilities to the force; building an integrated and unified trained and ready military and civilian cyber/signal workforce that will meet today's and tomorrow's requirements;
- Enhancing the Army's cyber capabilities. This includes assisting the Army with standing up a cyber career field, establishing a Cyber Center of Excellence at Fort Gordon, Georgia, setting up a Cyber & Signal School, and establishing Cyber Protection Teams, all of which open up a whole new realm of career opportunities;
- Expanding enterprise capabilities and improving information sharing from posts, camps, and stations down to the tactical edge;

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"Building the Army's capacity in IT and cyber, educating and training a new generation of cyber and IT professionals, reducing vulnerabilities to strengthen security of our network ... in all those mission areas, I expect our young people will support as they take our Army into the future."

-Lt. Gen. Robert S. Ferrell

- Increasing network throughput—boosting bandwidth for the Army network backbone to 100 Gigabytes per second, increasing installations to 10-gigabyte transmission speeds and ensuring capacity to optimize operations and eliminate constraints;
- Strengthening network operations and increasing security, which is key for minimizing external and insider threats; and
- Taking care of the Army's people.

The following other activities—bringing other young achievers along—probably never occurred to him.

Asked about Army support for students interested in careers, either in civilian service or in uniform, Ferrell cited a plethora of programs.

- The Army Educational Outreach Program (AEOP) activities, for students in K-12 schools, undergraduate and graduate schools include STEM competitions, internships, provision of teacher resources, scholarships and fellowships, aimed at students of all proficiency levels.
- For students in kindergarten to middle school, AEOP offers experiences in mobile discovery centers, housed in 18-wheel tractor-trailer rigs that travel across the country to present programs designed to show young people that studying science and math can be fun.
- The Junior Solar Sprint program is a design engineering challenge in which 4th- to 8th-grade students race solar electric cars they've designed and built. It promotes teamwork and problem-solving skills, investigation of environmental issues, and development of hands-on engineering skills.
- The eCybermission program is a Web-based science, mathematics and technology competition for 6th- to 9thgrade students to promote self-discovery and enable all students to recognize the real-life applications of science, math and technology. Teams propose solutions to real problems in their communities and compete for regional and national awards.
- The Research & Engineering Apprenticeship Program (REAP) lets high-school juniors and seniors participate in a hands-on summer research experience through mentoring in university laboratories.
- Similarly, the High School Apprentice Program allows



Lt. Gen. Robert Ferrell, chief information officer, United States Army, left with Dr. Eric Sheppard, dean of the Hampton University School of Engineering and Technology at the BEYA STEM Conference.

juniors and seniors to conduct research with Army-funded principal investigators as mentors in university labs.

 The Gains in the Education of Mathematics & Science program gives students in 7th- to 12th grades opportunities to participate in internships for one to four weeks in Army laboratories and learn technical skills. Advanced courses in subsequent years build on the prior experience.

Visit www.usaeop.com/programs to learn about these and other Army programs for students.

Lt. Gen. Ferrell's career is a shining example of the many opportunities available to young men and women who desire to serve our country. He emphasizes that these opportunities are available both in and out of uniform. "It's about education, setting goals, striving for excellence in everything you do, and having a mentor or someone that can help guide you through your journey. But most important, the key to success is having a passion for what you do!"

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